78 together such as a through stud (not shown) engaged by a knurled nut 83. Any suitable means may be used to retain vertically adjustable clamp 84.

A compressor 86 has a positive pressure port 87 and a negative pressure port 88. Pressure lines 89 are connected between compressor 86 and a pressure control valve 91. An additional pressure line 92 connects pressure control valve 91 to inlet pressure tube 77 in the sample chamber assembly 39.

A sample outlet line 93 extends through sample chamber base 78 extending to a sealed rotary union 94. A sample control valve 96 such as the pinch valve shown in FIG. 4 is located in sample outlet line 93, in this embodiment, just below the sample chamber assembly 39. A stepping motor 97 is connected through gearing 98 to the rotary union 94 to cause rotation of the lower portion thereof with respect to the upper portion. A spout or fill arm 99 extends from a lower portion of union 94 having a radius sufficient to convey samples to a point overlying openings 44 in storage container bottles 43.

A control module 101 is electrically connected by conductors 102 to compressor 86, pressure control valve 91, sample control valve 96 and stepping motor 97 as seen in FIG. 4. Control module 101 contains circuitry which may be seen by referring to FIG. 5. As seen therein, the clock 51 of FIG. 3 is shown enclosed in dashed lines. Mode switch 53 is shown positioned to select the signal to which the sampling cycle is responsive, time or flow. Manual switch 52 is also shown to provide a signal to initiate the sampling sequence. The selected signal initiating the sampler cycle is delivered to the power switch 54 which contains an initiate latch shown generally at 103 for turning on power circuit 54. Power circuit 54 is shown with the output power connected to two-cycle timer 57 as well as to compressor control circuit 56. Two-cycle timer 57 is also electrically connected to pressure valve control 58 as well as to the sample chamber fill and measurement timer 59. Timer 59 is electrically connected to sample control valve drive 61 and the final purge timer 62. Timer 62 produces output which is electrically connected to two-cycle timer 57, for resetting the timer as well as to the multiple sample multiplex circuit 63 and the multiple container multiplex circuit 64. A control switch 104 may be seen for circuit 64 for selecting from one through four bottles 43 to receive portions of a given sample. Another switch 106 is available at circuit 63 to select a predetermined number of samples, from one through five, to be deposited in each bottle 43. The output of multiple sample multiplexer and fill arm advance circuit 63 is connected to the circuit 66 for controlling the step advancement of rotatable filling arm 99. The multiple sample and fill arm advance circuit 63 provides an output connected to the fill arm step count circuit 67 which is seen to be connected to the initiate latch 103 to inhibit power switch 54. The electrical contact means 76 in the fill level probe circuit 68 is connected to the two-cycle timer 57 to terminate the fill portion of the cycle when probe 76 contacts the surface of the sample in sample chamber 39.

Clock 51 includes a crystal oscillator 107 and a series of integrated circuits, IC2 through IC6, for providing a number of time interval selections for input to initiate latch 103 when the sampler is in the time mode. Switch 108 provides for the time interval selection. A manual fill arm advance switch is seen at 109 and a manual purge switch 111 is also included connected to provide power when actuated to fill arm step control circuit 66 and compressor control circuit 56 respectively.

The portable flow meter 24 is shown in FIG. 6 having means for support 23 in the form of three threaded adjustable mounting feet 112 passing through threaded holes in the ends of mounting support arms 113. Flow meter 24 is contained in a water-tight case having a lower portion 114 and a sealed cover 116 attached to the lower portion 114 by latches 117. Water-tight electrical feed-throughs 118 are located on one side of the flow meter lower case 114.

FIG. 7 is a block diagram of the flow meter 24 and includes probe 27 suspended from a reel 119 cable 26. Probe 27 and cable 26 form part of an electrical circuit and provide an electrical ground therefor when probe 27 contacts flow 21 in a flow conduit such as sewer channel 13. Reel 119 is driven by a reel drive motor 121. Reel 119 is also connected through a clutch 122 to a fluid level sensor 123 which senses the relative head of the flow 21. A visual level indicator 124 is also driven through clutch 122. Head sensor 123 provides an electrical output related to head in the flow channel 13 which is connected to a servo control 126. Servo control 126 drives a servo motor 127 which is mechanically connected to drive a head to flow converter 128. Head to flow converter 128 mechanically drives a servo feedback pot 129, a pen chart recorder 131 providing a time record of flow, and a visual indicator 132 providing a percentage maximum flow rate indication.

FIG. 7 also shows an analog flow signal control 133 which may be a potentiometer driven by the head to flow converter 128 and providing an output voltage connected to a flow proportional pulser 134. Pulser 134 may be a voltage controlled oscillator, but is a gated oscillator in the preferred embodiment. Pulser 134 provides a number of output pulses which are connected to a frequency divider 136 for providing a smaller number of output pulses which is proportional to the number of input pulses. The output pulses from frequency divider 136 are adjusted as will be hereinafter described to provide an indication of flow quantity at a total flow meter 137 in minutes of full flow through channel 13. The output from frequency divider 136 is also directed to a sample interval selector 138 which provides an output signal at preselected increments of total flow. The output signal from sample interval selector 138 is connected to a relay 139. Relay 139 closes a circuit which provides a signal which may be connected to sampler 16 for initiating a sampling sequence when sampler 16 is in the flow mode.

A maximum level adjust 141, or gain adjust, is provided for adjusting the gain or servo control 126. Flow meter 24 includes a plurality of head to flow conversion means 128 which may be selected by a channel selecting means 142 to correspond to a specified cross section of flow channel 13.

The mechanical interrelationship of the principal components included in flow meter 24 are shown in FIG. 8. The reel 119 and the drive motor 121 therefor are seen with cable 26 supporting probe 27 depending therefrom in contact with the surface of fluid flow 21. The visual level indicator dial 124 is seen driven by motor 121 through clutch 122. The same means is used for driving level sensor 123 which in this embodiment is a potentiometer having an output connected to servo control 126. Maximum level adjust 141 is also a potentiometer having an output connected to servo control 126. Servo motor 127 is driven by control 126 and in